August 6, 2007

M.R. Witcher, CIH
Staff Industrial Hygienist
TSCA Coordinator
Syngenta Crop Protection, Inc.
410 Swing Road
Greensboro, NC 27409

Dear Mr. Witcher:

The Office of Pollution Prevention and Toxics is transmitting EPA's comments on the robust summaries and test plan for m-toluonitrile (3-methylbenzonitrile), posted on the ChemRTK HPV Challenge Program Web site on February 22, 2006. I commend Syngenta Crop Protection, Inc. for its commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that Syngenta advise the Agency, within 60 days of this posting on the Web site, of any modifications to its submission. Please send any electronic revisions or comments to the following e-mail addresses: oppt.ncic@epa.gov and chem.rtk@epa.gov.

If you have any questions about this response, please contact me at 202-564-8617. Submit questions about the HPV Challenge Program through the "Contact Us" link on the HPV Challenge Program Web site pages or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at tsca-hotline@epa.gov.

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

/s/

Mark W. Townsend, Chief
HPV Chemicals Branch

Enclosure

cc: O. Hernandez
N. Patel
J. Willis

EPA Comments on Chemical RTK HPV Challenge Submission:
3-Methylbenzonitrile

Summary of EPA Comments

The sponsor, Syngenta Crop Protection, Inc., submitted a test plan and robust summaries to EPA for 3-methylbenzonitrile (also known as metatolunitrile or MTN, CAS No. 620-22-4), dated January 5, 2006. EPA posted the submission on the ChemRTK HPV Challenge Website on February 22, 2006.

EPA has reviewed this submission and has reached the following conclusions:

1. Physicochemical Properties. The submitter needs to provide measured vapor pressure and water solubility data.

2. Environmental Fate. The submitter needs to provide measured stability in water and biodegradation data and recalculate the fugacity values using measured physicochemical parameters.

3. Health Effects. EPA agrees with the submitter that MTN qualifies as a closed-system intermediate with reduced testing. However, the submitter needs to provide data for the genetic and developmental toxicity endpoints for the purposes of the HPV Challenge Program. The submitter also needs to address deficiencies in the robust summaries.

4. Ecological Effects. EPA disagrees that there is no need to provide ecological toxicity data for MTN. The submitter needs to provide acute fish, daphnia, and algal toxicity data in robust summary format.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

EPA Comments on the 3-Methylbenzonitrile Challenge Submission

Test Plan

Physicochemical Properties (melting point, boiling point, vapor pressure, partition coefficient and water solubility)

Contrary to the submitter's assertion, closed-system intermediate status does not negate the need to provide adequate data for this group of endpoints.

The submitted data for melting point, boiling point and partition coefficient are adequate for the purposes of the HPV Challenge Program.

Vapor pressure. The estimated vapor pressure value of 0.187 mm Hg at 25^{o}C provided by the submitter is inadequate for the purposes of the HPV Challenge Program. Estimated vapor pressure values are adequate if they are under 1x10^{-6} Pa (7.5X10^{-4} mm Hg). The submitter needs to provide measured vapor pressure data according to OECD TG 104.

Water solubility. The estimated water solubility value of 921.2 mg/L at 25^{o}C provided by the submitter is inadequate for the purposes of the HPV Challenge Program. Estimated water solubility values are adequate if they are under 1 µg/L (1 ppb). The submitter needs to provide measured water solubility data according to OECD TG 105.

Environmental Fate (photodegradation, stability in water, biodegradation and fugacity)

The submitted data for photodegradation are adequate for the purposes of the HPV Challenge Program.

Stability in water. The submitter was not able to estimate a hydrolysis rate constant and indicates "no planned testing" for this endpoint. The half-life of 360 hours from the fugacity model, shown in Table 1 of the test plan, represents all applicable processes in water and does not satisfy this endpoint. As the sponsored substance contains a potentially hydrolyzable nitrile group, and the submitter has not demonstrated that hydrolysis will be negligible, the submitter needs to provide measured data for this endpoint following OECD TG 111.

Biodegradation. The submitter did not provide data for this endpoint and did not propose testing. The submitter needs to provide measured ready biodegradation data for this chemical following OECD TG 301.

Fugacity. The submitter needs to recalculate the fugacity values using measured data for physicochemical properties, especially vapor pressure. The use of estimated values introduces uncertainties that are magnified in modeling applications.

Health Effects (acute toxicity, repeated-dose toxicity, genetic toxicity, and reproductive/developmental toxicity)

The submitted data are adequate for the acute toxicity endpoint.

Genetic Toxicity. The submitter needs to provide data for the gene mutation (OECD TG 471) and chromosomal aberrations (OECD TG 473) endpoints.

Repeated-dose/Reproductive/Developmental Toxicity. The sponsor submitted a formal claim for reduced testing for health effects (exemption for repeated-dose and reproduction toxicity) based on the proposed closed system intermediate (CSI) status of the sponsored substance.

The Guidance for Testing Closed System Intermediates for the HPV Challenge Program (http://www.epa.gov/oppt/chemrtk/closed9.htm) allows for reduced testing provided certain criteria are met. The information required to judge a CSI claim must address the following:

I. Site information.
   A. Number of sites.
   B. Basis for "closed process" conclusion at each site.
      1) Process description.
      2) Monitoring data showing no detection.
      3) In the absence of monitoring data, the basis for believing that releases do not occur.
   C. Data on "presence in distributed products"

II. Information on transport (mode, volume, controls, etc.)
III. A data search showing that the chemical is not present in other end-products.

EPA agrees that the submitter has adequately addressed the criteria. MTN is produced at a single site, is consumed in the in-process reaction to make isophthalonitrile (IPN), and there are no off-site shipments. No data are available to indicate that MTN is present in other products above trace levels. Therefore, testing is not needed for the repeated-dose and reproductive toxicity endpoints.

However, the submitter does need to provide data for the developmental toxicity endpoint for the sponsored substance for the purposes of the HPV Challenge Program, preferably according to OECD TG 421.

Ecological Effects (fish, invertebrates, and algae)

The submitter provided no data, contending erroneously that factors related to CSI status negate the need to provide data for this group of endpoints. There is no such exemption in the HPV Challenge

Program for ecological effects. The submitter needs to provide acute ecotoxicity data on fish (OECD TG 203), invertebrate (OECD TG 202), and algal (OECD TG 201) species in robust summary format for the purposes of the HPV Challenge Program.

Specific Comments on the Robust Summaries

Health Effects

Acute toxicity. The supplied data are minimal. However, EPA suggests that the studies be reclassified as (4) unassignable, rather than (3) invalid, to reflect that limited study details were available, rather than that the data are invalid.

Followup Activity

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.